Claims

1. An electronic device, comprising a sensor having a magnetically permeable member and a circuit, wherein said circuit adjusts sensor output to provide sensor output data independent of temperature of said magnetically permeable member, wherein said circuit uses a signal derived from resistance of said sensor to correct for temperature.

2. The electronic device as recited in claim 1, wherein said magnetically permeable member is moveable.

3. The electronic device as recited in claim 1, wherein said magnetically permeable member is located within an inductor coil.

4. The electronic device as recited in claim 3, wherein said resistance comprises resistance of said inductor coil.

5. The electronic device as recited in claim 1, wherein said sensor is a displacement sensor.

6. The electronic device as recited in claim 1, wherein said sensor comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

7. The electronic device as recited in claim 1, wherein said circuit further uses a signal derived from resistance of said sensor to correct for a temperature gradient.

8. The electronic device as recited in claim 1, wherein said circuit comprises a variable

gain amplifier.

9. The electronic device as recited in claim 1, wherein said magnetically permeable member comprises a highly permeable material.

10. The electronic device as recited in claim 9, wherein said highly permeable material comprises permalloy, ferrite, and 400 series stainless steel.

11. The electronic device as recited in claim 1, wherein said magnetically permeable member comprises magnetoelastic characteristics.

12. The electronic device as recited in claim 11, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

13. An electronic device, comprising a coil, a magnetically permeable member that extends in said coil, and a circuit, wherein said circuit adjusts output voltage of said coil to compensate for a change in temperature in said coil and in said member.

14. The electronic device as recited in claim 13, wherein said magnetically permeable member is moveable with respect to said coil.

15. The electronic device as recited in claim 13, wherein said circuit uses resistance of said coil to compensate for change in temperature of said coil and in said member.

16. The electronic device as recited in claim 13, wherein said sensor is a displacement sensor.

17. The electronic device as recited in claim 13, wherein said sensor comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

18. The electronic device as recited in claim 13, wherein said core extends in two coils and wherein said circuit further uses a signal derived from resistance of at least one of said coils to correct for a temperature gradient across said coils.

19. The electronic device as recited in claim 13, wherein said circuit comprises a variable gain amplifier.

20. The electronic device as recited in claim 13, wherein said magnetically permeable member comprises a highly permeable material.

21. The electronic device as recited in claim 20, wherein said highly permeable material

comprises permalloy, ferrite, and 400 series stainless steel.

22. The electronic device as recited in claim 13, wherein said magnetically permeable member comprises magnetoelastic characteristics.

23. The electronic device as recited in claim 22, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

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24. An electronic device, comprising an inductor, a magnetically permeable member coupled to said inductor, and a circuit, wherein said circuit adjusts a voltage output of said inductor to provide a voltage independent of temperature of said inductor and temperature of said magnetically permeable member.

25. The electronic device as recited in claim 24, wherein said magnetically permeable member is moveable with respect to said inductor.

26. The electronic device as recited in claim 24, wherein said circuit uses resistance of said coil to compensate for change in temperature of said inductor and in said member.

27. The electronic device as recited in claim 24, wherein said inductor, member and circuit comprise a sensor.

28. The electronic device as recited in claim 27, wherein said inductor, member and circuit comprise a displacement sensor.

29. The electronic device as recited in claim 27, wherein said sensor comprises input pads for receiving a first signal and a second signal, said first signal having a higher frequency than said second signal.

30. The electronic device as recited in claim 24, further comprising a second inductor, wherein said magnetically permeable member is coupled to said second inductor and wherein said circuit further uses a signal derived from resistance of at least one of said inductors to correct for a temperature difference between said inductors and provide and provide a voltage independent of temperature difference between said inductors.

31. The electronic device as recited in claim 24, wherein said circuit comprises a variable

gain amplifier.

32. The electronic device as recited in claim 24, wherein said magnetically permeable member comprises a highly permeable material.

33. The electronic device as recited in claim 32, wherein said highly permeable material comprises permalloy, ferrite, and 400 series stainless steel.

34. The electronic device as recited in claim 24, wherein said magnetically permeable member comprises magnetoelastic characteristics.

35. The electronic device as recited in claim 34, wherein said magnetoelastic characteristics are modulated by strain, stress, or torque.

36. An electronic device for sensing at least one parameter, comprising:

a first circuit element comprising a reactance and a resistance, said first circuit element comprising input terminals and output terminals;

said input terminals for providing a first input signal and a second input signal different from said first signal to said first circuit element;

said output terminals for providing a first output signal and a second output signal from said first circuit element;

a second circuit element connected to said output terminals to use said first output signal and said second output signal, wherein said second circuit element generates a first parameter that depends exclusively on said resistance and a second parameter that depends exclusively on said reactance; and

a third circuit element connected to said second circuit element wherein said third circuit element compensates said second parameter for changes in said first parameter.

37. An electronic device as recited in claim 36, wherein said first circuit element comprises a variable reluctance transducer having a high permeability core, wherein said first parameter provides a measure of temperature and said second parameter provides a measure of position of said core in said transducer.

38. An electronic device as recited in claim 37, wherein a portion of said variable reluctance transducer is included in a Wheatstone bridge.

39. An electronic device as recited in claim 37, wherein said a variable reluctance transducer comprises a differential variable reluctance transducer.

40. An electronic device as recited in claim 36, wherein said first parameter is used to correct said second parameter for variation in permeability of said core with temperature.

41. An electronic device as recited in claim 36, wherein said third circuit element comprises a third output signal, wherein said third output signal comprises displacement of said core corrected for temperature of said core.

42. An electronic device as recited in claim 36, wherein said third circuit element further comprises a device containing a relationship between said permeability and said first parameter, wherein said device provides said relationship for said correction.

43. An electronic device as recited in claim 42, wherein said device comprises a variable gain amplifier.

44. An electronic device as recited in claim 43, wherein said second circuit element comprises a voltage controlled gain amplifier.

45. An electronic device as recited in claim 42, wherein said device comprises a programable device.

46. An electronic device as recited in claim 45, wherein said programable device comprises a microprocessor.

47. A circuit as recited in claim 36, wherein said first input signal has a first frequency and said second input signal has a second frequency, said first frequency lower than

said second frequency, and wherein said second circuit comprises a first frequency filter connected to said output, and a second frequency filter connected to said output, wherein said third circuit element comprises an input from said first frequency filter and an input from said second frequency filter, wherein said third circuit element adjusts its output based on the low frequency input.

48. An electronic device as recited in claim 47, wherein said second circuit element further comprises a fourth circuit element to compensate for a temperature gradient across said transducer.

49. An electronic device as recited in claim 48, wherein said fourth circuit element comprises a summing amplifier to add said output signals across said bridge.

50. An electronic device as recited in claim 48, wherein said fourth circuit element comprises a summing amplifier to add output signals across said bridge and a device to provide a difference between said output signals across said bridge, wherein said summing amplifier and said device are connected to receive signal passing through said low pass filter.

51. An electronic device as recited in claim 48, wherein said fourth circuit element further comprises a device to provide a difference between said output signals across said bridge, wherein said device is connected to receive signals passing through said high pass filter.

52. An electronic device as recited in claim 48, wherein said fourth circuit element further comprises a device to provide a difference between conditioned low frequency signal and conditioned high frequency signal, wherein said difference signal is proportional to position compensated for gradient of temperature.

53. A sensor comprising a component and a circuit, wherein said component is used by said circuit both for sensing a first parameter and for sensing temperature wherein the temperature is used in said circuit for correcting said first parameter to make output of said sensor independent of change in temperature with time.

54. A sensor as recited in claim 53 wherein the temperature is further used for correcting said first parameter to make said sensor independent of temperature gradient.

55. A circuit as recited in claim 53, wherein said component comprises an inductor.

56. A circuit as recited in claim 55, wherein said component comprises a bridge circuit comprising two inductors.

57. A circuit as recited in claim 55, wherein said inductor comprise a magnetically permeable core.